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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	G40-C084
Plant ID No.:	051-00237
Applicant:	Independence Excavating, Inc.
Facility Name:	Cameron Plant
Location:	Cameron, Marshall County
SIC / NAICS Code:	1429 / 212319
Application Type:	Construction
Received Date:	December 19, 2016
Engineer Assigned:	Thornton E. Martin Jr.
Fee Amount:	$1,500
Date Received:	December 20, 2016
Complete Date:	February 24, 2017
Applicant Ad Date:	December 19, 2016; Re-published on January 27, 2017
Newspaper:	*Moundsville Daily Echo*
UTM's:	Easting: 535.45 km Northing: 4414.55 km Zone: 17
Description:	Applicant proposes to construct and operate a portable rock crushing and screening plant designed to produce sized materials.

INTRODUCTION TO PROJECT

Independence Excavating, Inc. Is proposing the construction and operation of a portable rock crushing plant that will produce 5" minus and 2" minus materials. The proposed crusher (CR-2) is a Powerscreen XH500 Horizontal Impact Crusher, manufactured in 2014. The maximum processing rate of the CR-2 shall be 250 tons per hour (TPH). The proposed crusher (CR-1) is a Powerscreen Premiertrak 400 Jaw Crusher, manufactured in 2016. The maximum processing rate of CR-1 shall be 250 TPH. Water spray systems have been proposed for the purpose of controlling particulate emissions throughout the process.

DESCRIPTION OF PROCESS

Material is loaded into the crusher hoppers of (CR-1) and CR-2) by a loader. The material is then vibrated into the crushers where the material is crushed into smaller pieces. The material

drops through the bottom of the crusher (CR-2) where the material is transferred on to the Powerscreen H6203R Horizontal Screen (S-1) from the impact crusher. After running through the screen plant, the material either goes on stacker conveyor (BC-1) to the 2" minus material stockpile (OS-2) or on stacker conveyor (BC-2) to the 5" minus material stockpile (OS-1). For the material that is crushed by (CR-1), it will go on to the Telestack TC421 Track stacker conveyor (BC-3) to the 5" minus material stockpile (OS-1).

Independence Excavating, Inc. will utilize the following equipment and throughput at the Cameron Plant:

Table 1: Equipment Summary

Source ID No.	Emission Unit Description (Make, Model, Serial No.)	Design Capacity		Control Device[1]	Month/Year Constructed, Reconstructed, or Modified
		TPH	TPY		
Equipment					
CR-1	Powerscreen 400 Jaw Crusher	250	250,000	WS	2/2017
CR-2	Powerscreen Horizontal Impact Crusher	250	250,000	WS	2/2017
S-1	Powerscreen Triple Deck Horizontal Screen	250	250,000	WS	2/2017
Conveyors					
BC-1	Telestack TC421 Track Stacker Conveyor	250	250,000	WS	2/2017
BC-2	Telestack TC421 Track Stacker Conveyor	250	250,000	WS	2/2017
BC-3	Telestack TC421 Track Stacker Conveyor	250	250,000	WS	2/2017
Stockpiles	**Emission Unit Description (Make, Model, Serial No.)**	**Base Area (Sq. Feet)**	**TPY**	**Control Device[1]**	**Month/Year Constructed, Reconstructed, or Modified**
OS-1	Open Stockpile – 5" minus	2,500	250,000	WS	2/2017
OS-2	Open Stockpile – 2" minus	2,500	250,000	WS	2/2017
Engine	**Emission Unit Description (Make, Model, Serial No.)**	**Design Capacity (bhp/rpm)**	**Manufactured Date**	**Control Device[1]**	**Fuel Throughput**
E-1	Scania DC9 84A, Tier 4F, Diesel engine - 275hp/202kw	275/1600	2016	SCR	14.1 gal/hr
E-2	Caterpillar C6.6, Tier 3, Diesel engine - 440hp/328kw	440/1800	2010	SCR	22.6 gal/hr
E-3	CAT C6.6 ACERT, Tier 3, Diesel engine - 202hp/151kw	202/2200	2008	SCR	10.4 gal/hr
E-4	Deutz 3 D 2011, Tier 3 Diesel engine - 38hp/28.75kw	38/1800	2011	A/F	2.0 gal/hr
E-5	Deutz 3 D 2011, Tier 3 Diesel engine - 38hp/28.75kw	38/1800	2011	A/F	2.0 gal/hr
E-6	Deutz 3 D 2011, Tier 3 Diesel engine - 38hp/28.75kw	38/1800	2011	A/F	2.0 gal/hr

[1] WS - Water Spray; SCR - Selective Catalytic Reduction; A/F - Air/Fuel Ratio; N - None

DESCRIPTION OF FUGITIVE EMISSIONS

Fugitive emissions will be generated from the crushing operations but, water spray bars will be located on the plants to control these emissions. The crushers will be placed against the rock cut so no material will be hauled to the crusher. The haul road from the crusher stockpile will be less than 200' to the compressor pad fill area. The finished stockpiles will be kept to a minimum because the material will be hauled to the pad daily and compacted into place.

SITE INSPECTION

Independence Excavating, Inc. has a contract with Columbia Pipeline Compressor Station to produce sized materials on-site. The proposed site is situated within the Compressor Station boundaries, therefore, a site inspection was not deemed necessary at this time in conjunction with this permitting action.

Directions: The project is 5.5 miles North of Cameron, WV on US-250. Project will be on the right hand side.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Fugitive emission calculations for continuous and batch drop operations, transfer points, crushing and screening, storage piles, and paved and unpaved haul roads are based on AP-42 "Compilation of Air Pollution Emission Factors." Control efficiencies were applied based on the Reference Document for General Permit G40-C. The revised estimated emissions were revised from what was originally submitted in the application. The emissions are based on a throughput of 250 TPH and 250,000 TPY. Operating hours are 2,600 hours / yeart. The estimated emission calculations were performed by the applicant using the General Permit G40-C Excel emission calculation spreadsheet and were checked for accuracy and completeness by the writer.

The engine emissions included in the application were found to be overstated, as the calculations were based on AP-42 emission factors instead of Manufacturers Data or EPA's Certificate of Conformity. An Incomplete Letter was emailed on January 18, 2017 outlining the additional and corrected information required to continue processing the application.

A CARB Executive Order exists for engines E-1, E-2 and E-3 providing certified emissions data. They are as follows: E-1 (U-R-024-0028), E-2 (U-R-024-0390) and E-3 (U-R-022-0113). A Certificate of Conformity was provided for engines E-4, E-5 and E-6 (Certificate Number: DZX-NRCI-11-19). The revised engine emissions were the same as originally submitted, however, engine emissions were re-calculated by the writer using the certified emissions data and are presented in Table 3.

Table 2: Emissions Summary *(less Engines, operating 2,600 hours/year)*

Emission Source	Maximum Controlled PM Emissions		Maximum Controlled PM_{10} Emissions	
	lb/hr	TPY	lb/hr	TPY
FUGITIVE EMISSIONS				
Stockpiles	0.01	0.05	0.01	0.02
Unpaved Haulroads	6.67	0.78	1.97	0.23
Paved Haulroads	0.00	0.00	0.00	0.00
Total Fugitive Emissions	*6.68*	*0.83*	*1.97*	*0.25*
POINT SOURCE EMISSIONS				
Equipment Emissions	1.45	0.73	0.54	0.27
Transfer Point Emissions	0.44	0.22	0.21	0.11
Total Point Source Emissions	*1.89*	*0.95*	*0.75*	*0.38*
TOTAL FACILITY EMISSIONS				
Total Facility Emissions	**8.57**	**1.77**	**2.72**	**0.63**

Table 3: Engine Emissions *(operating 2,600 hours/year)*

Source ID	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tpy)
E-1	Nitrogen Oxides	0.17	0.23
	Carbon Monoxide	0.09	0.12
	Volatile Organic Compounds	0.01	0.12
	Sulfur Dioxide	0.56	0.73
	Particulate Matter-10	0.01	0.01
	Total HAP's	0.01	0.01
E-2	Nitrogen Oxides	1.99	2.59
	Carbon Monoxide	1.95	2.54
	Volatile Organic Compounds	0.68	0.88
	Sulfur Dioxide	0.90	1.17
	Particulate Matter-10	0.12	0.15
	Total HAP's	0.01	0.01
E-3	Nitrogen Oxides	0.94	1.23
	Carbon Monoxide	1.30	1.69
	Volatile Organic Compounds	0.32	0.42
	Sulfur Dioxide	0.42	0.55
	Particulate Matter-10	0.08	0.10
	Total HAP's	0.004	0.005
E-4	Nitrogen Oxides	0.35	0.46
	Carbon Monoxide	0.35	0.45
	Volatile Organic Compounds	0.12	0.16
	Sulfur Dioxide	0.08	0.11
	Particulate Matter-10	0.02	0.02
	Total HAP's	0.02	0.01
E-5	Nitrogen Oxides	0.35	0.46
	Carbon Monoxide	0.35	0.45
	Volatile Organic Compounds	0.12	0.16
	Sulfur Dioxide	0.08	0.11
	Particulate Matter-10	0.02	0.02
	Total HAP's	0.02	0.02
E-6	Nitrogen Oxides	0.35	0.46
	Carbon Monoxide	0.35	0.45
	Volatile Organic Compounds	0.12	0.16
	Sulfur Dioxide	0.08	0.11
	Particulate Matter-10	0.02	0.02
	Total HAP's	0.02	0.02
Total	Nitrogen Oxides	4.15	5.43
	Carbon Monoxide	4.39	5.70
	Volatile Organic Compounds	1.37	1.90
	Sulfur Dioxide	2.12	2.78
	Particulate Matter-10	0.27	0.32
	Total HAP's	0.08	0.08

REGULATORY APPLICABILITY

PSD has no applicability to the proposed facility. The proposed Construction of a non-metallic minerals processing plant is subject to the following state and federal rules:

45CSR7 To Prevent and Control Particulate Matter Air Pollution From Manufacturing Processes and Associated Operations

The facility is subject to the requirements of 45CSR7 because it meets the definition of "Manufacturing Process" found in subsection 45CSR7.2.20. The facility should be in compliance with Subsection 3.1 (no greater than 20% opacity), Subsection 3.7 (no visible emissions from any storage structure pursuant to subsection 5.1 which is required to have a full enclosure and be equipped with a control device), Subsection 4.1 (PM emissions shall not exceed those allowed under Table 45-7A), Subsection 5.1 (manufacturing process and storage structures must be equipped with a system to minimize emissions), Subsection 5.2 (minimize PM emissions from haulroads and plant premises) when the particulate matter control methods and devices proposed within application G40-C084 are in operation.

According to Table 45-7B, for a type 'a' source with a maximum process weight rate of 500,000 lb/hour, the maximum allowable emission rate is 47 lb/hour of particulate matter. The maximum emission rate is 2.16 lb/hour of particulate matter according to estimated emissions in fact sheet G40-C084.

45CSR13 Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits, and Procedures for Evaluation

The proposed construction is subject to the requirements of 45CSR13, subsection 2.24.a. The source is subject to NSPS subparts OOO and IIII. The applicant submitted the proper $1,500 application fee and published a Class I legal advertisement in the *Moundsville Daily Echo* on January 27, 2017

45CSR16 Standards of Performance for New Stationary Sources
40 CFR 60 Subpart OOO: Standards of Performance for Nonmetallic Mineral Processing Plants

The proposed Construction is subject to 40 CFR 60 Subpart OOO because it will occur after April 22, 2008 and the plant processes more than 25 tons of rock per hour. The proposed construction will include two (2) crushers, one (1) screen and three (3) belt conveyors, which are defined as affected facilities in 40 CFR 60 Subpart OOO. The proposed construction is subject to 45CSR16, which incorporates by reference 40 CFR 60 Subpart OOO - Standards of Performance for Nonmetallic Mineral Processing Plants. The facility should be in compliance with 60.672 (b) no greater than 7% opacity from any transfer point on belt conveyors or from any other affected facility (as defined in 60.670 and 60.671) and no greater than 12% opacity from any crusher when the particulate matter control methods and devices proposed within application G40-C084 are in operation.

45CSR30 Requirements for Operating Permits

In accordance with 45CSR30 Major Source Determination, the rock crushing and screening facility will be a non-major source which is subject to NSPS Subparts OOO and IIII. The

facility's potential to emit will be 0.70 TPY of a regulated air pollutant (PM_{10}), not including fugitive emissions, which is less than the 45CSR30 threshold of 100 TPY. Therefore, the facility will be subject to 45CSR30 and classified as a Title V deferred non-major source.

45CFR60 Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

Independence Excavating, Inc. is subject to this subpart because the engines were manufactured after April 1, 2006. The engine emissions are certified as follows E-1, Tier 4F; E-2, Tier 3; E-3, Tier 3; and E-4, E-5, E-6 are EPA Tier 3 Certified.

40CFR63 Subpart ZZZZ—National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

Independence Excavating, Inc. is subject to 40CFR63 Subpart ZZZZ, because E-1 thru E-6 are considered a new area source of HAP's since they will be constructed on or after June 12, 2006, however, the only requirements that apply are those required under 45CFR60 Subpart IIII.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

Various VOC/non-criteria regulated pollutants are emitted from the incomplete combustion of diesel fuel. These emissions, however, are generally small and do not adversely impact the quality of the surrounding ambient air.

AIR QUALITY IMPACT ANALYSIS

Air dispersion modeling was not performed due to the size and location of this facility and the limit of the proposed construction. This facility will be located in Marshall County, WV, which is currently designated as 1997 Maintenance area for $PM_{2.5}$ (particulate matter less than 2.5 microns in diameter).

GENERAL PERMIT ELIGIBILITY

The proposed construction of this facility meets the applicability criteria (Section 2.3), siting criteria (Section 3.1) and limitations and standards (Section 5.1) as specified in General Permit G40-C.

MONITORING OF OPERATIONS

G40-C registrants will be required to perform the following monitoring and recordkeeping:

1. Monitor and record daily and monthly records of the amount of nonmetallic minerals processed.
2. Monitor and record calendar monthly and calendar annual quantity of fuel consumed and hours of operation for all engines and combustion sources.
3. Monitor and record calendar annual quantity of organic liquid throughput in all registered storage tanks.
4. Conduct visual observations of all points listed in the registration that are subject to opacity limits.
5. Conduct annual preventative maintenance/inspection, and all routine maintenance service and repairs as required, to facilitate proper control device performance, for the control devices listed in the registration.
6. Perform are applicable required monitoring, recordkeeping, reporting and testing that is required under 40CFR60 Subparts OOO, IIII, and JJJJ.
7. These records shall be maintained on-site for a minimum of five (5) years from the date of record creation and shall be made available to the Director of the Division of Air Quality or his or her duly authorized representative upon request.

RECOMMENDATION TO DIRECTOR

The information contained in this Construction application indicates that compliance with all applicable regulations should be achieved when all proposed particulate matter control methods are in operation. Due to the location, nature of the process, and control methods proposed, adverse impacts on the surrounding area should be minimized. No public comments were received. Therefore, the granting of a G40-C registration to Independence Excavating, Inc. for the Construction of a crushing and screening plant located near Cameron, Marshall County, WV is hereby recommended.

Thornton E. Martin Jr.

Thornton E. Martin Jr.
Permit Engineer

February 24, 2017
Date